

ecomapping®

International case studies of different ecomapping users worldwide

- Ecomapping is used as a tool for good-housekeeping and awareness-raising of local multipliers and companies in Mashrek & Maghreb countries
- Ecomapping to improve environmental protection in old state russian factories
- Ecomapping a tool to help belgian public environmental coordinators implementing greening of government programmes
- Ecomapping is used for internal and external audit support of ISO 14001
- Ecomapping as a dynamic 'GIS' tool to manage industrial estates
- Ecomapping can assist in improving environmental performance in very small companies
- Ecomapping is used as a tool for baseline assement to implement step by step ISO 14001 and EMAS in 250 companies
- Ecomapping is used as an on-line training tool in a environmental awareness raising programme for the english petrol industry
- Green productivity Training in Asia supports sustainable market evolution
- Ecomapping in a Canadian innovative approach for on-line Recognition of ISO 14001 organisations
- 15 minutes training with a fast visual learning tool for belgian Catering workers
- Ecomapping helped to elaborated the thinnest documented ISO 14001 certified EMS in Belgium
- A time saving tool for eco-counsellors of the wallonian chemical federation
- Eco management at the Brussel's Opera - workers participation in a cultural institution
- Ecomapping in the « Wallonian School of Tomorrow »
- Ecomaps on the Wallonian shopfloor
- Recycling parks and waste prevention for Flemish local authorities
- A smart teacher on EMS for adult learning

Brussels, August 2002

Case studies compiled & written by
Heinz Werner Engel, Marcel Van Meesche, Jean Christophe Masure

With the support of



Eco-Counselling Institute



Belgian Association
of Eco-Counsellors (ABECE)



Federal Office for Scientific,
Technical and Cultural Affairs

ecomapping[®] is used as an on-line training tool in a environmental awareness raising programme for the english petrol industry

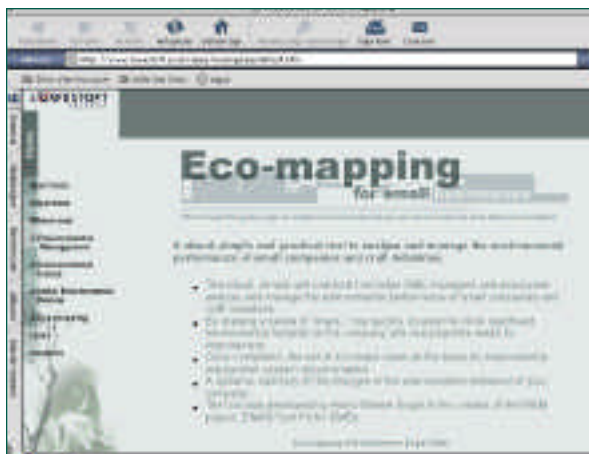
The Lowestoft college in the United Kingdom has developed an on-line version of the ecomapping methodology to help SME's from the petrol industry to implement step-by-step environmental management systems.

The English Lowestoft college works with local SME's to improve their environmental performance.



They have launched a training programme to raise environmental awareness among local SME's of the petrol production and distribution chain. The objectives of the programme are :

- To provide an awareness of some of the environmental issues that underpin environmental decision-making
- To introduce a simple Ecomapping tool to help analyse environmental performance
- To give case studies that show how the Ecomapping tool can be applied



They have already implemented Ecomapping in 3 SME's.

This on-line adult learning platform helped educating workers that are working within off-shore petrol extraction companies.

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ecomapping® as a pre-audit support for environmental certification in Italy

UNICA is the Italian association of Environmental Consultants. Ecomapping helps delivering adequate services to SMEs and facilitate contact with local authorities. It has proven to be an interesting internal audit tool and a useful information support for external consultants.

The NGO UNICA is the Italian Union of Environmental Consultants. UNICA's objectives are to promote the profession of environmental consultant towards institutions and the private sector.



Besides the environmental protection, environmental management becomes a more and more a threat for the competitiveness of Italian SME's since ISO 14001 and EMAS are part of public call for tenders in some regions and provinces of northern Italy and of some large private companies.

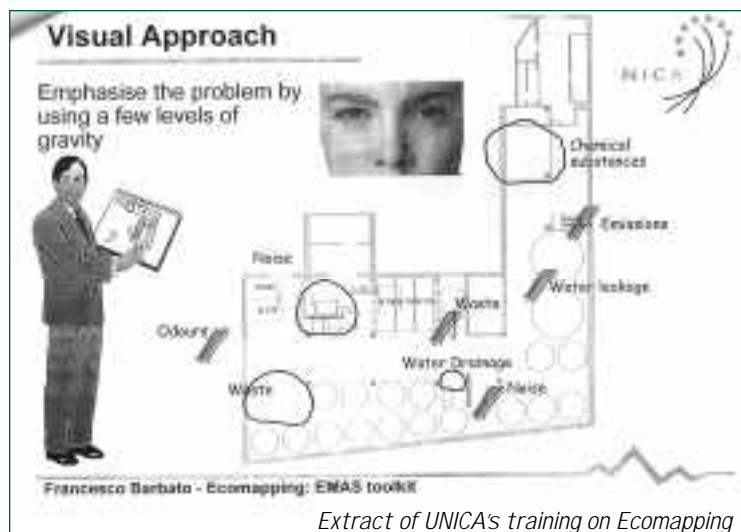
But good environmental practices are still not spread in Italian SME's and through the workers, who mostly have a low education level.

The environmental counsellors members of UNICA use Ecomapping during the implementation of environmental management systems like ISO 14001 and during training courses for counsellors and workers.

UNICA pinpoint 4 advantages to use ecomapping as an pre-audit and internal audit tool to assess the performance of environmental management systems based on the ISO 14001 :

- It simplifies the technical language used by engineers
- It drastically reduces the paper needed
- It gives a visual communication of problems and solutions
- It lead to the involvement of workers

The counsellors of UNICA will further promote Ecomapping as a tool to simplify the administrative relations between SME's and public authorities.



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Ecomapping translates complicated engineer talk into easy understandable communication .

Francisco Barbato - UNICA Napoli

ecomapping® *goodhousekeeping and awareness-raising of Middle East local multipliers and companies*

The DELTA Network regroups industries and chambers of commerce that has the objective to raise environmental awareness in the industrial tissue of 11 arab countries. Ecomapping is used in Jordania, Syria, Palestine and Algeria to prepare SME's to improve their environmental performance and trade equitably with the European market in the framework of the future Mediterreanean European trade zone.

SBA, Sustainable Business Associates, is a small NGO based in Switzerland that is working to engage industrialists in 'eco efficiency' with the aim of minimising environmental impact and improving business productivity. SBA has initiated the DELTA Programme in 1995 to sensitise industrialists of 11 countries of the Makresh & Maghreb to new business risks and opportunities. DELTA provides management tools and training to move towards sustainable development.



Ecomapping is one of the management tools proposed to the DELTA Network. The Belgian association of Eco-Counsellors has allowed SBA, by courtesy of the Ecomapping designer, Heinz Werner Engel, to use this tool free of charge to empower SME's in developpeing countries. Ecomapping is seen as an easy and non-costly to implement and that helps companies to identify and select eco-efficient opportunities. It can be considered as one of the first steps towards eco-efficiency. Building up on the Good Housekeeping Guide published by the german GTZ, Ecomaps complete the role of the GHK checklists and provide a visual assessment of the environmental situation.



Quality Food is an ISO 14000 certified company. In this specific case, Ecomapping is useful in keeping an easy to use record of all the aspects that need to be monitored.

Training seminars has been delivered in partnership with local chambers of commerce and NGO's in Jordania, Syria, Algeria and Palestina. In Jordania, ecomaps permitted 30 participants to elaborate specific environmental action plans regarding resource use and waste on the shopfloor a foam factory, a food canning factory, a plastic molding company, a food company and a hotel.

An EU Life project is supporting DELTA Network to further promote Ecomapping by the dissemination of brochures and case studies in Arabic and Turc and the organisation of trainings and seminars.

"Eco-mapping is a new way to encourage industry to take action based on economic efficiency principles. It involves training employees how to prepare maps of the environmental problems in their factories, teaching them to limit toxic waste, and how to conserve energy,"

Raouf Dabbas - president of the Friends of Environment Society (FOES) in Jordania.

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ecomapping® to improve environmental protection in old state russian factories

Ecoline, a Russian NGO, focuses on former state-owned companies and builds capacity to increase environmental protection.

Ecomapping is used to speed up the documentation process, to provide information quickly from audits, and enable corrective actions to occur sooner.

The Russian NGO Ecoline was created in 1995 with the following principal goals:

- facilitating an open and informed public dialogue on environmental issues;
- improving access of various sectors of the Russian society to environmental information;
- collecting, analysing and disseminating environmental and related information.



Ecoline focuses on medium to large companies : 300-400 employees to 2000 employees. They sometimes touch huge administration bodies of 10000 employees.

Ecoline aims to facilitate development of voluntary environmental activities by old state owned industries, including the implementation of environmental management systems (EMS). To achieve this goal, Ecoline conducts research, organises training workshops, and assists the enterprises that implement EMS.

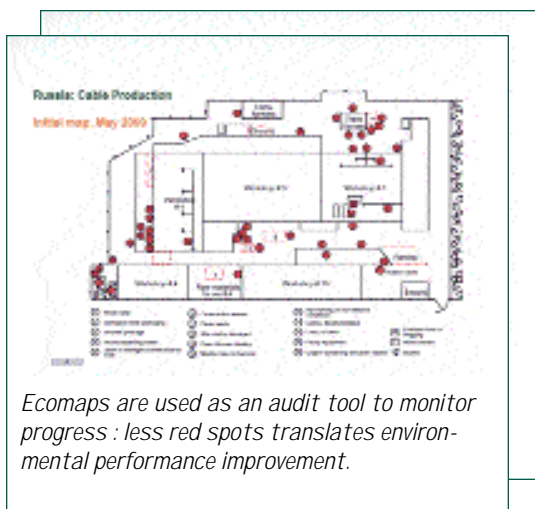
Besides financial resource problems, old state factories face huge environmental problems regarding the use of natural resources and energy, the production of hazardous waste and the emissions of highly pollutants to air and groundwater.

Legislation and governmental state requirements and supply chain requirements especially from Western companies pushes these companies to implement EMS.

Ecoline used Ecomapping to assist 20 old state factories to raise environmental protection. Ecomapping was used in the EMS training sessions and helped the participant companies to identify environmental problems. These projects were financed by western governmental

organisations from the US and the Netherlands.

Ecomapping has been implemented in 8 companies. Among these, 4 companies are involved in the implementation of a wider environmental management system (ISO 14001). They are currently using Ecomapping as an audit tool, oftently combined with pictures.



Ecomaps are used as an audit tool to monitor progress : less red spots translates environmental performance improvement.

Ecomapping is very easy to adapt to a particular purpose. It can be used at various levels of environmental protection in companies. It is also a tool in the beginning of an EMS.

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Sergei Daiman – Project Manager at Ecoline

ecomapping® Canadian innovative approach for on-line Recognition of ISO 14001 organisations

Improving environmental performance is as important for a micro - enterprise, to increase productivity and enhance profitability, as it is for larger companies. These smaller companies also need to be appropriately recognized for having taken the first step towards a credible environmental management system. A collaboration between Ecomapping and The Registry (www.14000registry.com) is underway to provide micro-enterprise with a means to gain market acceptance.

Lynn Johansson from E2M – ISO 14000Registry has been a lead proponent for making the standard more accessible to small and medium-sized enterprise globally, without lowering the value or quality of the standard. The ISO 14000 Registry is an internet database of companies that have made a self declaration to have achieved the requirements of ISO 14001. Environmental trained accountants can verify the information given by these companies.



Recognition systems are a means of confirming the existence of progress towards a common goal. In this case it is the adoption of environmental management systems aligned to the requirements of ISO 14001, as a passport to trade and a stepping stone to sustainability.

Recognition systems for environmental management can provide internal stakeholders with a sense of confidence and confirmation of achievement. It can also offer external stakeholders with a level of comfort that an organization is acting on its commitment to merge the intelligent management of environmental concerns into common everyday business practices.

The cost of recognition for micros and SMEs must be balanced against the benefits it produces, especially considering the limited resources (time, money and people) that are part of the characterization of these enterprises. The intent is to support all entities, but especially micros and SMEs, in their efforts to meet a global yardstick, incrementally. A progressive approach may have one or more levels.



Ecomapping can be an entry point for micros. It's a simple yet elegant means to enable micros (and larger entities) to understand what it is that they do, and what is present in their businesses, which are aspects of their organization. When these aspects are significant and impact the environment in a negative way, they lead to increased costs and potential community and regulatory conflict.

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"The use of ecomapping encourages people to act."

Lynn Johansson - Director E2M

ecomapping® a dynamic 'GIS' tool to manage industrial estates collectively in France

Orée, a French NGO, promotes partnership between business and local authorities through the development of tools for SMEs and the exchange of experiences. Orée's experience shows that Ecomapping can be used as a visual approach to improve environmental management within industrial estates and to apply ISO 14001 collectively.

Orée is a french NGO that aims to gather business and local authorities around common objectives to develop tools to integrate environment in their daily work, to manage a network of environmental professionals and to promote environmental management in SME's and local authorities.

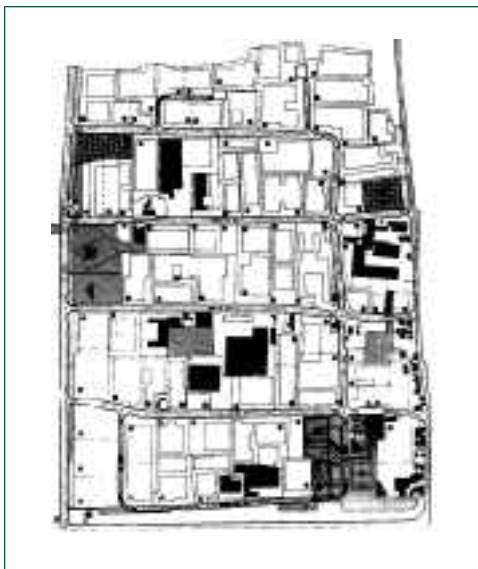


Orée is working since several year to develop innovative approaches to implement environmental practices into the management of industrial estates. The aim of these initiatives is handle a collective approach of environmental management and to involve all stakeholders in the implementation process.

French industrial estates are implementing Environmental management systems like ISO 14001 and EMAS. Six industrial estates are already ISO 14001 certified (Syndival - Landacres, Plaine de l'Ain, Vesoul Technologia, SEMAPA - Paris, Syndicat Mixte de l'Arbois, SYPARTEC - Savoie Technolac) and one of them is EMAS registered (Plaine de l'Ain).

Ecomapping was adapted by Orée to be part of a tool kit to help industrial estates managers to implement step by step environmental management systems. The development of this tool kit was funded by the french ministry of environment.

The tool kit has been tested in 4 french industrial estates. It will now be widely distributed.



The adapted weather maps helped to involve all stakeholders (industrial estates manager, companies managers, workers, service companies, neighbours, etc).

The ecomaps helped the industrial estates manager to identify the environmental problems and conflicts of the aspects of his specific activities : sewage network management, greengrounds, water distribution, roads, lighting, collective waste management, monitoring of the groundwater quality, etc.

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"Ecomapping is a smart and helpful assistant for local public managers."

Jean-François Vallès - Orée

ecomapping® *assists in improving environmental performance in very small hungarian companies*

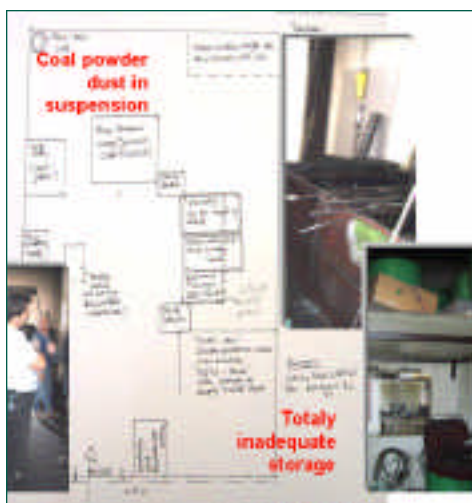
The technical advisers of KOVET, the Hungarian Association for Environmental Management, use Ecomapping to improve the environmental performance of SMEs across all industrial sectors in five regions of Hungary. Ecomapping is used mainly for the first environmental assesment of small companies.

The Hungarian Association of Environmentally Aware Management (KÖVET) was established in October 1995. The organization acts as a platform for ongoing information exchange, with the aim of promoting environmentally aware business management, to find new ways for industry to reduce its environmental impacts and to help to use this as a basis for competitive advantage. Local offices are working in the different regions of Hungary and are focussing on giving SME's the opportunity to access the European Market by improving their environmental performances.



The Hungarian Government is required by the European Union, like all accessing countries, to demonstrate legislation and implementation of EU acquis before becoming a member state. Therefore a EU Phare programme was undertaken in 1999 - 2000 for enhancing the environmental performance of Hungarian SME's by the transfer of know-how and the use of foreign experience. This programme permitted to promote and hand on tools developed in Europe like Ecomapping in various hungarian SME's. Heinz Werner Engel from the Belgian Association of Eco-Counsellors delivered eco-mapping trainings for the representatives of the local offices of Kovet.

Ecomapping was for example used in Nyiregyhaza to assist the reconversion of an old military camp in a SME industrial estate. It helped improving the environmental performances of micro-SME's and craft shops working in the fields glass transformation, printing, metal surfacing, textile printing and rubber. Each micro-SME present on the site employed no more than 2 to 6 workers. The results of the ecomapping assessments permitted to develop an immediate and low cost environmental action plan.



A rubber micro company based on the site identified problems related to :

- waste management – mixed waste with raw material and inadequate collection of oil
- energy - bad insulation
- air and risks – irritating vapours produced during vulcanisation
- noise – emission of noise at the rubber presse

Simple and low budget actions permitted them to reduce significantly their environmental problems (For example ear protection costs 3 \$ and adhesive tape with special profile for insulation 15 \$)

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Ecomapping gives a fast snapshot on the practice of environmental management .

Gergeley Toth - Director from Követ

ecomapping® to help belgian public environmental coordinators implementing sustainable development programmes

Belgium has engaged its federal government in a strong action plan for sustainable development. One of the objectives of this action plan is to implement environmental management systems in the belgian federal ministries and administrations. In order to help the federal environmental coordinators in implementing EMS, ecomapping has been adapted by eco-counsellors to the specific means of an administration.

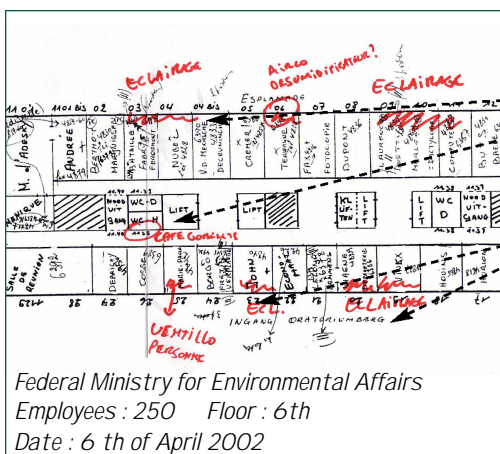
In July 2000 the belgian Federal Government has adopted the Belgian Federal Plan for Sustainable Development. This Plan indicates the set up a federal environmental coordination unit to coordinate the step-by-step implementation of an environmental management system in the different ministries. The government has established, by June 2001, an environmental charter based on Regional charters like the Brussels Regional Environmental charter and on internationally recognised systems such as the EMAS and ISO 14001. .



Eco-counsellors of the Belgian Association of Eco-counsellors and the Institut Eco-Conseil helped the Federal Environmental Coordination Unit to deliver environmental management trainings. . A pilot project was undertaken within 4 administrations of 3 different ministries to adapt the Ecomapping tool to the specific structure of the public administrations and elaborate training material and exercises :

- material and energy flows by the setting up of performance indicator tables,
- environmental perception of employees by organising opinion polls
- eco-maps to assess environmental practices & equipment

The feedback of the results during several training sessions helped 30 environmental coordinators of the different ministries that have committed themselves to implement an environmental management system. Ecomapping helped them in the assessment of the environmental aspects and problems of their own buildings and the successful elaboration of their environmental action plan as requested by the federal environmental charter.



For example ecomapping helped to identify environmental problems related to :

- Inadequate Ventilation and Heating systems
- Use of Disposable dishes
- Storage of allergenic chemicals
- Use of non-biodegradable cleaning products
- Lights not extinguished
- Use of non recycled paper
- Bad waste separation
- Flooding tap
- No recto-verso Photocopies

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"Ecomapping helped us to involve to all the civil servants in our EMS"

Ben Memdé - environmental coordinator OSTC

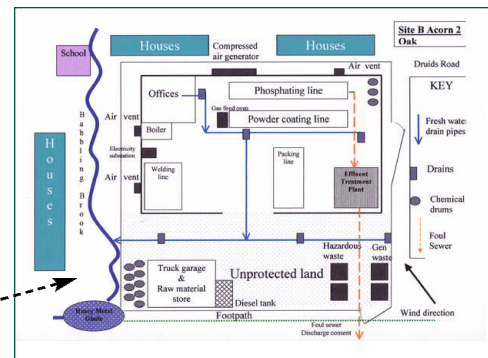
ecomapping® to implement EMS step by step in 250 companies in 5 European countries

The EPICENTRE Life project in 5 EU countries is build on the UK Acorn model that aims to facilitate a step-by step uptake of EMAS and ISO 14001 in SME's. This by experimenting a 6 level certified approach in 250 SME's. The Acorn model involves multinationals that act as mentors to drag their own suppliers in the process and improve the relationships in the supply chain. As a baseline assessment and training tool, Ecomapping allows local trainers to aid SME's in achieving the requirements of the first Acorn level and gain recognition.

The Epicentre Project is an EU-Life funded programme involving Ireland, UK, Hungary, Germany and Spain. This 27-month project aims to support continuous improvement in environmental performance by to develop and promote innovative approaches and applications of environmental performance evaluation and support knowledge and technology transfer and encourage capacity building of regional partners .

Epicentre project uses the UK Acorn methodology that employs state-of-the-art environmental management principles and methods to ensure, evaluate and report environmental performance improvement. The process facilitates uptake of EMAS and ISO 14001, especially by small and medium-sized enterprises. It offers a new 6-level certified approach to implementing an environmental management system (EMS) in line with ISO 14001 and EMAS. Acorn tries to helps SME's to satisfy the environmental criteria set by their existing major clients and to win new business by meeting the environmental criteria increasingly being set in contract tenders. This by getting the method and its levelled certification recognised by multinationals in the supply chain of participating SME's.

Epicenter develops support materials and methodologies based based on the 6 Acorn levels for capacity building of local deliverers. This training material specifies that Ecomapping can be used within SME's during the baseline assessment (first level) as an aid to the identification of likely significant environmental aspects and impacts of the organisations activities, products and services on a particular site. 3 different baseline assessment exercices based on the Ecomapping method are proposed.



In the UK, Ecomapping has been used in the implementation of the first level into more than 10 SME's. Epicenter has the objective to get 250 SME's engaged in the Acorn process and to achieve 5 EMAS registrations. The results will feed back to the DG Environment in order to develop a framework for contribution, implementation and updating of environmental policy and legislation.

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Ecomapping has permitted to strongly involve the workers from the very beginning of the implementation process of the environmental management system..

Matthias Gelber – WYG

ecomapping® Green productivity Training in Asia supports sustainable market evolution

Asian countries are promoting Ecomapping in the context of green productivity, a programme supported by the Asian Productivity Organization (APO) to support sustainable market evolution. Ecomapping is one of the tools used in this programme to help export oriented SME's to improve their environmental performances. Ecomapping has already been used in India, Thailand and Hong Kong.

The Asian Productivity Organization (APO) is an inter-governmental regional organization established by Convention in 1961 to increase productivity in the countries of Asia and the Pacific region through mutual cooperation (Bangladesh, China, Fiji, Hong Kong, India, Indonesia, Iran, Japan, Korea, Laos, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam). The APO is organizing innovative training programs as Green Productivity for multipliers to empower export oriented SME's with the capacity to be part of global sustainable sourcing.



Green Productivity (GP) is a strategy for enhancing productivity and environmental performance for overall socio-economic development. It offers a holistic strategy whereby enterprise can leverage productivity to improve environmental performance and enhance profitability. A clear methodology in six steps helps to achieve success.

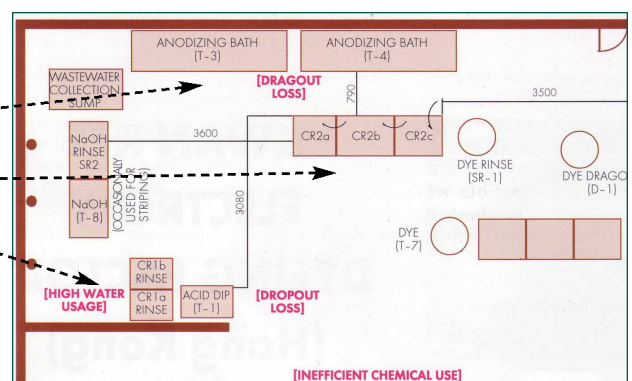
The Green Productivity programme uses proven tools like Pareto charts, Cause and effect analysis (Ishikawa), Flowcharts and process flow diagram, Material balance and... Ecomapping. Besides the identification of environmental aspects and problems, Ecomapping is integrated in the GP programme to support the preparation of an action plan, the monitoring and evaluation of results and the management review .

Ecomapping has already been used in SME's in India (tanning factory), Thailand (Lychees or schrimp canning factories, Palm oil factories) and Hong Kong (electroly dying factory).

For example, the Hong Kong based electroly dying factory used Ecomapping to identify and manage environmental problems related to

- the loss of acid
- risks problems due to wet floors
- an excessive rinse water use

The Green Productivity Programme helped this SME to reach specific environmental and economic benefits.



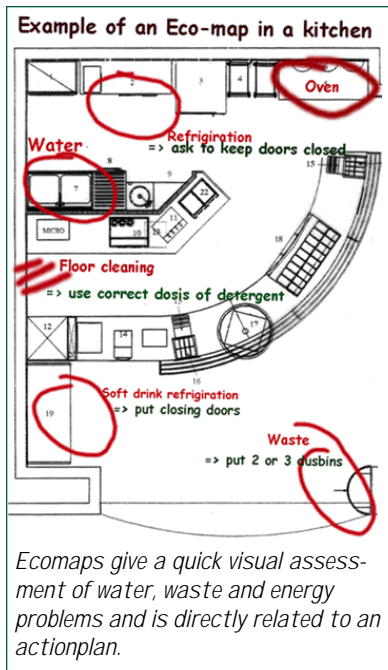
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"Ecomapping is a powerful tool intergrated in our 6 step approach of Green Productivity,"

Mandar Parasnis - APO program officer

ecomapping® 15 minutes training with a fast visual learning tool for Catering workers

Sodexo is the world leader in catering services with more than 15000 kitchens worldwide. Ecomapping has been used in the pilot implementation of an EMS following the ISO 14001 requirements in a Belgian kitchen with 12 workers.



The application of ecomapping tool helped for environmental awareness raising among the workers where short-term contract work is important and requires quick and easy-to-use training tools :

- Fast working process are demanding short training time (< 10 minutes)
- Procedures are not written down, but mostly oral and visual.
- High seasonal rotation and Interim workers.

Ecomapping has also been linked with already existing HACCP procedures to identify and monitor eventual bacterial contaminations through crossings between waste and fresh food.

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ecomapping® helped to elaborated the thinnest documented ISO 14001 certified EMS in Belgium

Rectilux is actually the tiniest ISO 14001 certified company in Belgium. This engine reconditioning company is part of the automotive supply chain and employs 7 in southern Belgium. After having successfully implement an ISO 9002 system as requested by its suppliers, the company decided to implement an simple but efficient EMS following the ISO 14001 requirements.

The barriers faced in this micro company were a lack of time, lack of resources and know-how and the cost of implementing the system. The walloon regio accepted to take in charge 75% of the envrionemental consultant costs.

- The use of Ecomapping during the EMS implementation process helped to give immediate visualisation of environmental problems.
- Ecomapping was integrated within the existing quality management system - ISO 9002.
- Following the Ecomapping philosophy, the whole certified ISO 14001 procedures doesn't exceed 10 pages.



Rectilux
Luc Antoine
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- Environmental data and indicators are communicated on the website of the company.

ecomapping® *A time saving tool for eco-counselors of chemical federations*

Walchim is the wallonian federation of chemical industry. The different objectives of the federation are :

- to represent and promote the interests of the chemical sector in front of the public authorities
- to offer individual or collective services and information to member companies
- to offer thematic expertise to SME's on security, quality and environmental matters.



The use of different colors to visualise 5 environmental thematics gives a quick overview of problems.

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Within the applications of the EU directives of IPPC and SEVESO II, an eco-counsellor had to visit and assess more than 200 SME's sites within 2 years.

Because of little time the eco-counsellor could spend on site, Ecomapping was one of the most suitable tools to assist him in the company's environmental assessment, the discussions with the company's environmental coordinator and the preparation of his report. To save time he used one eco-map per company with 5 different colors to identify problems related to air, noise, waste, soil and water.

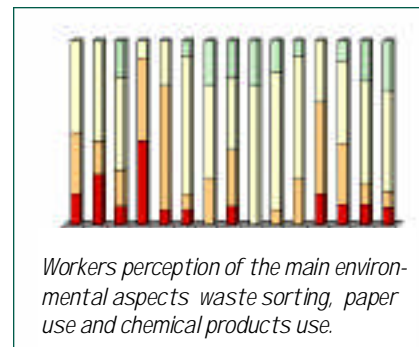
ecomapping® *and eco management at the Opera - workers participation in a cultural institution*

La Monnaie Opera House in Brussels was inaugurated in 1700, which makes it one of the oldest cultural institutions in Europe. It is still handling the whole process of a opera production in-house (costumes, scenery, paintings, etc). Therefore it employs more than 500 persons working in different technical departments. The Opera House started in June 2000 to evaluate the environmental impacts of their activities and to elaborate action plans with the assistance of the Belgian Association of Eco-Counselors and the financial support of the Brussels Ministry for Environment.

The initial review process used the Ecomapping opinion polls to get employees involvement and material flows to identify major consumptions and the use and management of hazardous products. The results were evaluated in eco-teams which created a dynamical. Communication of results and actions were involving the workers and the press.

La Monnaie Opera House
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The Opera House is now going to implement step by step an EMS based on the requirements of the Brussels Regional Eco-Management Label.



Workers perception of the main environmental aspects waste sorting, paper use and chemical products use.

ecomapping® in the « School of Tomorrow »

Coren is a Belgian NGO working on environmental awareness raising in schools. The « school for tomorrow » programme has already involved 260 schools in 8 years. The aim of this programme is to make an environmental baseline assessment and an action plan schools in a participatory and pedagogical way. The students are involved in the identification of the environmental aspects and problems. The schools that have succeeded to publish an environmental action plan are labelled and recognised by the Walloon ministry of environment. 120 labels were distributed until now.



Ecomapping helped to assess environmental problems and to elaborate an action plan in the 12 technical classes (mechanics, chemistry, hair dresser, etc.).

The problems faced in this programme is that it has more a pedagogic approach included in the student courses. There was no structural change in the management system of the schools. In order to develop a methodology to assure continuous improvement of the labelled schools, Coren proposed to follow 3 pilot schools in their implementation of ISO 14001 (a nursing school, a technical school and a general school).

The Ecomapping tool has been included in the methodology and tested in the technical school « Robert Schuman » of Eupen.

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ecomapping® Ecomaps on the shopfloor

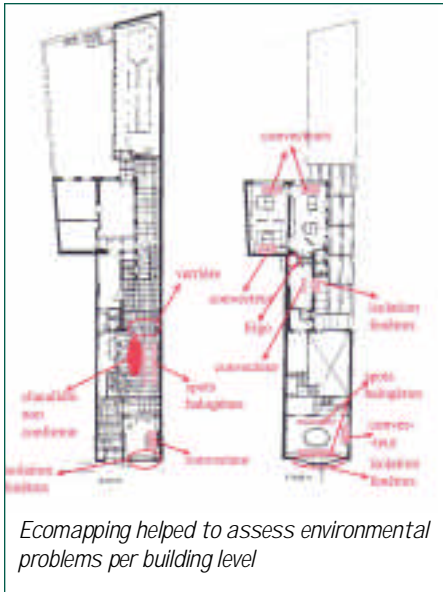
The RISE project in Wallonia aims to raise environmental awareness among workers of the 2 main Walloon trade unions in different industrial sectors. Ecomapping is used since several years and is part of a 5 days specific trainings are organised on general environmental management, waste reduction, energy reduction and goodhousekeeping. Workers receiving the trainings have to experiment the ecomapping exercises in their own company. The results are presented and discussed during another training and exchange day. Two wider applications of ecomapping were organised : one in a metal moulding industry and one in technical control centers for cars. The ecomapping methodology is being adapted to the specific means and structure of the technical control centers. A pilot experimentation within 2 stations (a modern and an old center) permitted to develop a methodology that will be suitable to the 30 technical control centers in Wallonia. Three maps were adapted to the specific environmental aspects of the activities of the center : the urban map to assess problems of mobility, air pollution and noise in the neighbourhood, the air map to assess the problems of air extraction, the noise map. The ecomaps of air have been matched with best available technologies regarding air extraction.

RISE Ecomapping for technical control centers for cars
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ecomapping® is a smart teacher on EMS for adult learning

The Eco-Counselling training Institute of Namur was set up by public fundings in 1989 with the main objective of environmental promotion and management with a view to sustainable development. Its basic missions are to train eco-counsellors, to raise environmental awareness of employees in both private and public sectors, to assist eco-counsellors and to co-ordinate its actions with those carried out in other countries.



Ecomapping helped to assess environmental problems per building level

Trainees are intended to work in different fields : administrations, local authorities, private companies. Ecomapping is used as an easy and adaptable adult learning tool to introduce environmental management systems.

During training sessions, students have the opportunity to test the method by drawing their first maps in real shopfloors of private companies, local authorities or schools. Thanks to Ecomapping, the complexity of an environmental management system becomes accessible for students, micro's managers, staff of both private companies and public sector.

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ecomapping® Recycling parks and waste prevention for local authorities

The NGO Eclips is helping local authorities to improve their environmental performances and management systems. Their work is mainly focussed on waste management and stakeholders mediation.

Eclips used Ecomapping to implement environmental management in administration offices, local authorities waste management plans and the management of waste recycling parks.

Ecomapping was very useful to involve and train low educated workers of the recycling parks.

eclips - vzw prisma
Guy Duchene
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ecomapping®

TRAINING KIT "training for trainers"

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This training kit is destined to Eco-Counsellors, environmental consultants and multipliers. 12 hours of interactive adult learning and participatory hands on exercises will allow to get a deeper understanding of this powerful tool.

Brussels, August 2002

Training kit developed by
Heinz Werner Engel, Marcel Van Meesche, Jean Christophe Masure

With the support of



Eco-Counselling Institute
<http://www.eco-conseil.be>



Belgian Association
of Eco-Counsellors (ABECE)
<http://www.abece.be>



Federal Office for Scientific,
Technical and Cultural Affairs
<http://www.sstc.be>

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ECOMAPPING

TRAINING FOR TRAINERS KIT

MODULE 1: Kick off meeting and presentation of the ecomapping seminar

This presentation clarifies the objectives of the seminar, the agenda of the workshop and introduces the network or organization supporting the project. The exercise should help participants know each other, their problems and expectations and break the ice.

MODULE 2 :Environmental mega trends and pressure on SME's

This module presents the mega trends of the environmental management and the pressure on SME's.

MODULE 3 :Introduction to EMS, ISO 14001 and EMAS

The objective of this module is to introduce the notions of environmental management systems, to define the different stages to the eco-management and to present the existing management systems : ISO 14001 and EMAS

MODULE 4 : Get used to the environmental vocabulary

The objective of this module is to get customized with definitions and keywords of environmental management. It also introduces key concepts and evaluates the general level of knowledge of participants

MODULE 5 : The Ecomapping tool box

This module presents the Ecomapping tool box concept : logic, usefulness, different steps, data integration and link to ISO-EMAS

MODULE 6 : Ecomapping and Picasso - Drawing a map

This module allows participants to draw their first map, discover the mapping technique and the Ecomapping vocabulary. Participants understand that problems linked to the environment can be visualized and make a link with the problems they have to address in their own companies

MODULE 7 : Your company in the city

The objective of this module is to identify the environmental impact exerted by the organisation on its local environment and vice versa. It allows to raise awareness of the interactivity of the site with its local environment. It helps to evaluate environmental impacts of the surrounding area and to broaden the perspective from shopfloor to the outside world

MODULE 8 : Mobility in the city - Cars, trucks and bikes

The objective of this module is firstly to establish a rough evaluation of the impact of transport for the whole site to operate. Participants will then learn how to find a way to communicate it and to propose a mode of monitoring

MODULE 9 : The material flows and characteristics

This module helps to learn to identify the input/output material of the organisation in order to operate in good conditions. Participants will then learn to quantify the input/output material of the organisation and to propose a differentiated formal listing divided up in different categories (air, water,energy, soil...)

MODULE 10 : Calculate your contribution to the greenhouse effect

The objective of this module is to become aware of the quantity of greenhouse effects gases produced by our activity and that changing practises can reduce it.

MODULE 11 : Workers implication and fast opinion polls

The objective of this module is double : understand that workers implication is fundamental for the success of a environmental management system and propose an adaptable tool : the fast opinion poll.

MODULE 12 : Define the boundaries of your management system

This module helps to define te boundaries of a management system in relation to the control and influence we can exert. Boundaries are not only physical but also exist through contractual relationships and even through reltions with the end-users of the company products.

MODULE 13 : Data integration and the use of ecomapping

During this module, participants will remind the different stages of work and the way they will sharpen the « Ecomapping » view. During the previous modules, many informations have been collected which allows to roughly identify the main environmental aspects and impacts of the organization. All these informations will help to prepare the Ecomapping stage, by putting forward the main points that should be focussed on.

MODULE 14 : Ecomapping – The basics

The objective of this module is to become able to implement ecomaps in a real situation .

MODULE 15 : Filling the gaps

This module shows to the participants how to do more extensive research based on environmental significant aspects identified during the initial review. Four main types of information can be useful at this level : legal information, measurements, technical or checking forms and interviews of staff involved.

MODULE 16 : Your filing and documentation system

This allows to identify the useful documents to be gathered. Participants understand the necessity for a first screening of useful documents, to identify the useful and already available information in the very inside of the organisation and to start organizing and controlling documents in the very ealy steps of the EMS.

MODULE 17 : Environmental performance indicators : The control panel of your management

This module allows to understand the notion of Environmental Performance Indicator and get used to defining them. Participants understand the usefulness for controlling and managing the environmental performance of the organisation make a link with

the communication process of environmental performance to the staff and the outside world

MODULE 18 : Your micro environmental report

This module will get participants familiarized with environmental report writing. They understand that the environmental report is the environmental shop window of the company. It must be accessible and understandable by as many people as possible, and at the same time be as exhaustive as possible regarding the approached themes

MODULE 19 : Factor 10 and ecomapping

This module is a game which allows to visualize that the implementation of a living environmental management system requires important modifications in the organisation chart as well as in the operating mode. Participants understand that a complete change in the way of thinking the process enable them to obtain a lot more efficient results.

MODULE 20 : Don't shoot at the piano player !

Participants are required to get a feed-back of each participant on the training, its positive and negative points, how it has answered to their expectations and the way it can be improved.

This training kit is destined to Eco-Counsellors, and multipliers.

16 hours of interactive adult learning and participatory hands on exercises will allow to get a deeper understanding of this powerful tool.

Training kit developped by Heinz Werner Engel, Marcel Van Meesche, Jean Christophe Masure

Brussels,
August 2002

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MODULE 1: Kick off meeting and presentation of the ecomapping seminar

Module	Duration	Objective of the session	Required materia
Presentation of the seminar	15 min	Kick off Ice breaking	PPT presentation
Exercise of presentation of the participants	45 min		Exercise sheet

Objective and benefits of the session :

The presentation will clarify the objectives of the seminar, the agenda of the workshop and introduce the network or organization supporting Ecomapping.

The exercise should :

- help participants know each other and break the ice
- adapt the seminar to the problems and expectations of the participants

Working process step by step

1. the facilitator presents the seminar (content, agenda, network)
2. the facilitator briefly introduces the presentation exercise of each participant
3. the facilitator hands out the exercise sheet to all participants
4. each participant has got 2 minutes time to interview his neighbour and to quickly prepare his presentation.
5. Participants are asked :
 - to present themselves :name, company, sector, position, environmental responsibility
 - to identify 3 main environmental problems in their own organization,
 - to identify 3 main management problems in their own organization,
 - to explain their main expectation from the seminar
6. the facilitator asks each participant to briefly present(2-3 min max.) his/her neighbour
7. the facilitator draws a summary of the different elements quoted on the blackboard : environmental problems,management problems, expectations.
8. the facilitator summarizes the key points

Methodology

1. Powerpoint Presentation
2. Interactivity and group dynamic : each participant has to take the floor after the exercise

Comments

PPT presentation has to be adapted in relation to the kind of project and organization supporting and financing the project

EMS links - Use

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
15 min	3 min	2 min	40 min	60 min

MODULE 2 : Environmental mega trends and pressure on SME's

Module	Duration	Objective of the session	Required materia
Presentation of mega trends and pressure on SME's	50 min	Help to understand the role of Ecomapping in the international market place	PPT presentation

Objective and benefits of the session :

Help to understand the role of Ecomapping in the international market place

Working process step by step

1. the facilitator presents the following topics on a PPT presentation:

Mega trends & environmental management

Evolution of problems and tools

Environmental Policy trends in OECD & EU

No consensus on EMS

Organisational structure of SME's

Impacts of globalisation on SME's

Who wants EMS in the market ?

Lowering the barriers to access the standards ?

2. Question time

Methodology

Powerpoint Presentation

EMS links – Use

ISO14001 references

Training, awareness and competence

4.4.2

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	50 min			50 min

MODULE 3 : Introduction to EMS, ISO 14001 and EMAS

Module	Duration	Objective of the session	Required materia
EMS Presentation	60 min	Introduce the notions of environmental management systems, ISO14001 and EMAS	PPT presentation

Objective and benefits of the session :

The objective of the session is :

- to explain what is an environmental management system
- to define the different stages to the eco-management
- to present the existing management systems : ISO14001 and EMAS

Working process step by step

The facilitator presents the following topics on a PPT presentation :

- Environmental Policy trends in EU
- Does EMS mean EMS?
- What is EMAS?
- ISO 14001? EMAS goes further
- EMAS, its logo and 2 uses
- Current implementation by sectors
- Distribution of EMAS organizations and verifiers

Methodology

PPT presentation by the facilitator

Comment

If the facilitator can spend more time on this module, he can use a much longer and more complete PPT presentation (time budget : 1 day)

This presentation approaches the same topics but integrates a much more detailed training on ISO14001

EMS links – Use

ISO14001 references

Training, awareness and competence 4.4.2

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	60 min			60 min

MODULE 4 Get used to the environmental vocabulary

Module	Duration	Objective of the session	Required materia
EMS Keywords Exercise	30 mns (20 persons)	Get customized with definitions and keywords of environmental management system	Pre-prepared presentation with the definitions Exercise sheet Glossary

Objective and benefits of the session :

This exercise should help the trainees :

- get familiarized with the term of environmental management
- integrate key concepts
- evaluate the general level of knowledge of participants

Proposed definitions : Accreditation, agreement, environmental analysis, audit, auditor, certification, sustainable development, eco-audit (EMAS), eco-efficiency, eco-label, impact study, environmental performance indicators, standard, environmental policy, environmental program, site, environmental management system, clean technology, environmental verifier.

Working process step by step

1. the facilitator briefly presents shortly the exercise
2. the facilitator hands out one exercise sheet to every participant, mentioning one of the EMS keywords
3. each participant has 5 mns time to give a 3 sentence definition of one keyword
4. each participant reads out his/her own definition
5. the facilitator simultaneously presents the ISO and EMAS definitions on a slide and comments the difference between both of them.
6. the entire glossary with the EMS terms and definitions is given to participants at the end of the session.

Methodology

Interactivity and group dynamic : every participant has to speak up during the very early stage

Comment

In case of a training cycle extending to several months, this exercise should be repeated with the same people and the same keywords. In this event, it is interesting to observe the evolution of their own definition over time while integrating new concepts. Therefore it is recommended to keep the written definitions of the participants mentioning their names and the date.

EMS links – Use

ISO14001 references

Familiarization with the ISO 14001 definitions

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
2 mn	3 mns	5 mns	20 mns	30 mns

MODULE 5 :The Ecomapping tool box

Module	Duration	Objective of the session	Required materia
Ecomapping concept and tool box	30 min	Present the framework of a light management system adapted to the SME's specificities	PPT presentation

Objective and benefits of the session :

This module presents the ecomapping tool box concept :logic, usefulness, different steps, data integration and link to ISO-EMAS.

Step by step, the presentation brings the participants to integrate the ecomapping philosophy and the work method.

Working process step by step

1. The facilitator presents the following topics in a PPT presentation :

- Ecomapping : the tool box
- Five differents steps
- Visual vocabulary
- The logic
- The usefulness
- Urban map
- Material flow
- Weather map
- The maps
- Action programme by subject
- Data integration
- Environmental report
- Link to ISO and EMAS

2. Question time

Methodology

Powerpoint presentation

EMS links – Use

ISO14001 references

Environmental aspects	4.3.1
Legal and other requirements	4.3.2
Objectives and targets	4.3.3
Environmental management program	4.3.4
Training, awareness and competence	4.4.2
Competence	4.4.3
Monitoring and measurements	4.5.1
Environmental management system audit	4.5.4

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	30 min			30 min

MODULE 6 : Ecomapping and Picasso - Drawing a map

Module	Duration	Objective of the session	Required materia
Presentation of Ecomaps	30 min	Present a wide panel of case studies of ecomapping	PPT presentation
Exercise on drawing a map	60 min	Let the participants draw their first map, discover the mapping technique and the ecomapping vocabulary	Ecomap template

Objective and benefits of the session :

The presentation shows a wide range of uses of the ecomapping techniques and specific as well as sectorial applications.

The exercise should help the participants :

- learn how to draw a map
- get familiarized with the ecomapping vocabulary
- understand that problems linked to the environment can be visualized
- make a link with the problems they have to address in their own companies

Working process step by step

1. presentation of case studies of Ecomapping by the facilitator
2. the facilitator hands out an ecomap template to all the participants and invites them to draw their first urban map and site map
3. the participants go out of the classroom and draw their first map
4. after the exercise, the facilitator makes a debriefing of the exercise, the participants can comment and give their feelings. The facilitator evaluates the quality and the restraint of the maps.

Methodology

Individual exercise

Group dynamics & information exchange

EMS links – Use

ISO 14001 references

Initial review 4.3.1

Documentation 4.4.4

Objectives and targets 4.3.3

Environmental management program 4.3.4

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	30 min	60 min		90 min

MODULE 7 Your company in the city

Module	Duration	Objective of the module	Required material
Urban map Presentation Exercise	45 mns (20 persons)	Identify the environmental impact exert by the organisation on its local environment and vice versa	Case studies slides with urban maps (PPT file) Coloured pens Digital camera Ecomaps template*

* or a map drawn in
Module 6

Objective and benefits of the session :

The objective of the session is

- raise awareness of the interactivity of the site with its local environment
- evaluate environmental impacts of the surrounding area
- broaden the perspective from shopfloor to the outside world

Working process step by step

1. general introduction : The facilitator explains the difference between the out looking perception of the site and the focus on internal process. He also presents some examples of urban maps by slides
2. hands out an ecomaps template to each participant containing a short description of the exercise as well as coloured pens
3. makes the participants walk around the site and observe the surrounding : buildings, types of habitations, types of neighbourhood (social) roads, garden...
4. participants draw and report visually the areas of environmental problems and interactions (a digital camera can be used – pictures illustrate the maps)
Some guidance is required : Air, waste management, soil contamination, natural resources and raw materials use, local nuisance (noise, vibration, odour, landscape impact), problems linked to transport, occupation of public space
5. each participant explains and briefly presents his/her map to everybody

Methodology

Interactivity and group dynamic : The work in the plenary is very enriching as very often perceptions on the same situation differs

EMS links – Use

ISO14001 references	
Environmental aspects	4.3.1
Legal requirements	4.3.2
Objectives and targets	4.3.3
Communication	4.4.3

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
10 mn	5 mns	20 mns	10 mns	45 mns

MODULE 8 Mobility in the city - Cars, trucks and bikes

Module	Duration	Objective of the module	Required material
Mobility program Presentation Exercise	30 mns (20 persons)	Evaluate the impact of mobility for the site	Exercise sheet Short presentation of the transportation means and their impact on environment (1 slide)

Objective and benefits of the session :

The objective is

- establish a rough evaluation of the impact of transport for the whole site to operate
- find a way to communicate it
- propose a mode of monitoring

Working process step by step

1. the facilitator presents some slides of impact of transport on environment
2. the facilitator explains the exercise and give some guidelines : Who is coming, how? Is there any incentive?
3. hands out to each participant an exercise sheet containing a short description of the exercise
4. each participant has 10 mns to propose an inventory of the movement : suppliers, clients, staff, public services and also inventory of means of transport (bus, tram, bicycle, car, truck...). Participants find their own way to present the calculations
Three main sources of transport will be put forward :
 - Personal (house – work place)
 - Clients deliveries
 - Suppliers deliveries
5. each participant reads out his/her evaluation of the transport impact of the site

Methodology

Interactivity and group dynamics

Comments

Participants understand that there are aspects that can not be manage and some others that can be. They realize that it is essential to talk to the outside world with facts and figures. Some elements could be possibly re-introduced in the environmental policy .

EMS links – Use

ISO14001 references	
Environmental aspects	4.3.1
Objectives and targets	4.3.3
Communication	4.4.3
Training, awareness and competence	4.4.2

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
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5 mn	5 mns	10 mns	10 mns	30 mns
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MODULE 9 The material flows and characteristics

Module	Duration	Objective of the module	Required material
Material flow Exercise	30 mns	Identify the input/output material of the organisation	Exercise sheet

Objective of the session :

The objective is to

- identify the input/output material of the organisation in order to operate in good conditions
- quantify the input/output material of the organisation
- propose a differentiated formal listing divided up in different categories (air, water, energy, soil...)

Working process step by step :

1. the facilitator precisely explains the definition of input/output
2. the facilitator introduces the exercise
3. the facilitator hands out an exercise sheet to each participant containing a short description of the exercise
4. each participant has 10 mns time to draw up a list . Each participant has to list products taking into account their hazardous and polluting specifications
5. each participant read out his/her results
6. The definition of some specific objectives and targets can come out of that first screening

Methodology:

Interactivity and group dynamic

Comments :

The facilitator stresses out the fact that there is input coming in and output coming out, whatever the organisation is. The facilitator outlines the need to measure it and give facts and figures with the aim of a further management (introduction to the next module)

EMS links – Use

ISO14001 references	
Environmental aspects	4.3.1
Legal and other requirements	4.3.2
Objectives and targets	4.3.3
Environmental management program	4.3.4
Monitoring and measurements	4.5.1

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
5 mn	3 mns	10 mns	12 mns	30 mns

Module 10 : Calculate your contribution to the greenhouse effect

Module	Duration	Objective of the session	Required materia
Exercise on Greenhouse effect Presentation Exercise	30 min	To become aware of the quantity of greenhouse effects gases produced by our activity and that it's possible to reduce it	Short PPT presentatic Exercise sheet Conversion factor in terms of CO2 production

Objective and benefits of the session :

This exercise should help participants :

- get aware that our European lifestyle generates an important CO2 and other greenhouse effect gases production
- get aware that our day-to-day activities may have an important impact on environment and that changing practises can reduce it.

Participants should link the results with Kyoto objectives and the mega trends. They also have to relate this exercise to their own personal production (transport, travels, cars,..)

Working process step by step

1. the facilitator briefly presents the exercise
2. hands out an exercise sheet to every participant on which he/she will report, for each kind of transport he/she uses, the CO2 production generated, related to the amount of kilometers covered with each vehicle.
3. The total amount can be compared afterwards with the CO2 production for the same distance covered by bus
4. the facilitator helps participants link the exercise to Kyoto objectives and to their personal production of CO2

Methodology

Group dynamic and exchange of information

EMS links – Use

ISO14001 references

Monitoring and measurements 4.5.1

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	5 min	15 min	10 min	30 min

MODULE 11 Workers implication and fast opinion polls

Module	Duration	Objective of the session	Required material
Weather map		Learn to use technics of workers implication	Case studies slides
Presentation	10 min		Weather map
Exercise	30 min		Directions for use

Objective and benefits of the session :

To get acquainted with the tool for workers implication, global perception of environmental problems and aspects . Three participatory fields for corrective actions
The main purpose of the tool is to integrate all workers in the EMS by building up a weather map

Working process step by step

Exercise 2

1. the facilitator explains the main objectives of the weather map
2. the facilitator presents some previous case studies by slides
3. hands out a weather map to each participant
4. each participant has to complete the weather map in relation to the situation of his/her company
5. the facilitator suggests a coffee break , and uses this short time to analyse the results
6. after the coffee break, the facilitator presents the results and asks the participants to comment these results.
7. the facilitator hands out ways of using the weather map

Methodology

Interactivity and group dynamic

Comments

The facilitator does not have to make both exercises . He chooses the most appropriate exercise in relation to his audience.

EMS links

ISO 14001 references	
Environmental policy	4.2
Environmental aspects	4.3.1
Environmental management program	4.3.4
Objectives and targets	4.3.3
Communication (internal)	4.4.3

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget*
5 min	5 min	10 min	20 min	40 min

Module 12 : Define the boundaries of your management system

Module	Duration	Objective of the session	Required materia
Management control map Presentation Exercise	30 min	Define the boundaries of a management system in relation to the control and influence we can exert.	PPT short presentatio Management control map*

*a blank weather map can be used

Objective and benefits of the session :

Define the boundaries of a management system in relation to the control and influence we can exert. Boundaries are not only physical but also exist through contractual relationships and even through relations with the end users of the company products.

The objective of the exercise is to :

- clearly identify limits of the management system of the organization
- clearly identify domains on which the management system has a direct control and an indirect control

Working process step by step

1. short presentation by the facilitator
2. the facilitator hands out the management control map (which can be a blank weather map)
3. each participant has to complete the map by putting forward domains where he has any control
4. for each domain where they have no influence, participants have to identify the person in his company who has this control.
5. Conclusions and question time

Methodology

Individual exercise

EMS links – Use

ISO 14001 references

Training, awareness and competence 4.4.2

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	5 min	20 min	5 min	30 min

Module 13 Data integration and the use of ecomapping

Module	Duration	Objective of the session	Required materia
Presentation	10 min	To remind the different stages of work and the way they will sharpen the 'ecomapping' view	PPT presentation with results of the previous exercises
Exercise	20 min		Exercise sheet

Objective and benefits of the session :

This module should help people understand that:

- During the different modules of the process, many information have been collected which allowed to roughly identify the main environmental aspects and impacts of the organization
- All these informations will help prepare the ecomapping stage, by putting forward the main points that should be focussed on

Working process step by step

1. the facilitator briefly presents the results of the previous exercises : figures, consumption, perceptions, etc.
2. hands out an exercise sheet representing the six environmental topics corresponding to the six maps of the ecomapping exercise. This is a preparation to the ecomapping exercise.
3. on each thematic, participants have to put forward, in relation to the previous exercises, the 3 or 4 points that should be focussed on during the ecomapping exercise
4. on a blackboard, the facilitator will help participants "find the clue" for the implementation of ecomapping. After this exercise, participants know, map by map, what they have to focus on .

Methodology

Individual exercise

EMS links – Use

ISO 14001 references

Documentation	4.4.4
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Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	10 min	10 min	10 min	30 min

Module 14 Ecomapping – The basics

Module	Duration	Objective of the session	Required materia
Ecomaps presentation Ecomaps Exercise 1 Exercise 2	1h40	To be able to implement ecomaps in a real situation	PPT short presentatio Digital camera Ecomap template

Objective and benefits of the session :

This module will :

- remind shortly the ecomaps :logic, usefulness, different steps
- focus on the way of implementing ecomaps : vocabulary, six different maps, work programme
- give the opportunity to each participant to implement ecomaps in a real situation

Working process step by step

1. the facilitator presents or distributes a short presentation of the ecomapping technique
2. the group goes in a pilot company
3. the facilitator divides participants into 6 different groups (one group by map)
4. the facilitator hands out an Eco-map template to each group
5. each group has to draw one map (a digital camera can be used by one group)
6. coming back to the classroom, each group presents their results
7. the facilitator comments the results and asks the group to give their comments and remarks.

Methodology

Exercise 1 : individual work and group dynamic

Exercise 2 : group dynamic

EMS links – Use

ISO14001 references

Environmental review	4.3.1
Legal and other requirements	4.3.2
Objectives and targets	4.3.3
Environmental management program	4.3.4
Training, awareness and competence	4.4.2
Competence	4.4.3
Monitoring and measurements	4.5.1
Environmental management system audit	4.5.4

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	10 min	60	30	1h40

MODULE 15 : Filling the gaps

Module	Duration	Objective of the session	Required materia
Organizing the information	20 min	Do more extensive research based on environmental significant aspects identified during the initial review	PPT presentation

Objective and benefits of the session :

Do more extensive research based on environmental significant aspects identified during the initial review.

The presentation helps participants to find out what kind of information is useful for more extensive research on each environmental aspect that was pointed out during the initial review

Three main types of information can be useful at this level :

- Legal information
- Measurements
- Technical or checking forms
- Interviews of staff involved

Working process step by step

PPT presentation by the facilitator

Methodology

PPT presentation by the facilitator

EMS links – Use

ISO14001 references

Environmental aspects	4.3.1
Legal and other requirements	4.3.2
Objectives and targets	4.3.3
Environmental management program	4.3.4
Documentation	4.4.4

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	20 min			20 min

MODULE 16 Your filing and documentation system

Module	Duration	Objective of the module	Required material
Useful documents		To identify the useful documents to be gathered	
Presentation	10 mns		PPT Presentation
Exercise	20 mns		Exercise sheet

Objective and benefits of the session :

The objective is to :

- understand the necessity for a first screening of useful documents
- identify the useful and already available information in the very inside of the organisation.
- Start organizing and controlling documents in the very early steps of the EMS

Working process step by step :

1. short presentation by the facilitator of the useful documents to be gathered
2. the facilitator stresses out the usefulness of gathering documents
3. the facilitator presents the exercise and ask the participant to enumerate the useful documents to be gathered that can be of any use before starting the environmental management system
4. the facilitator hands out an exercise sheet to each participant containing a short description of the exercise
5. each participant has 5 mns time to prepare a list
6. each participant presents his results. In the meantime, the facilitator notes them down while dividing up the list in different categories (like external, internal, licence, cadastre, collection fees, invoices, occupation premise, security map, complaint, statistic, benchmarking, internet...)
7. participants propose a good way to organize the classification of the document

Methodology

Interactivity, group dynamic

EMS link

ISO 14001 references	
Legal and other requirements	4.3.2
Communication	4.4.3
Documentation control	4.4.5
Records	4.5.3
Management review	4.6.1

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
15 mn	5 mns	5 mns	5 mns	30 mns

MODULE 17 Environmental performance indicators : The control panel of your management

Module	Duration	Objective of the module	Required material
Indicators	30 mns	Understand the notion of EPI and get used to defining them	Exercise sheet Examples of indicators by slides Benchmarking figures

Objective of the session :

The objective of the session is to

- get familiarized to the concept of environmental performance indicators
- understand the way of defining pertinent indicators
- understand the usefulness of indicators for controlling and managing the environmental performance of the organisation
- link the use of indicators with the communication process of environmental performance to the staff and the outside world

Working process step by step

1. the facilitator presents some examples of indicators by slides
2. hand out an exercise sheet to each participant containing a short description of the exercise
3. each participant has to define 10 indicators
4. each participant presents his indicators to the whole assistance.
5. to conclude the exercise, the facilitator explains the interest of the benchmarking
Thanks to the benchmarking, indicators become interesting to build one's own objectives and targets.

Methodology

Individual exercise

Comments :

A link can be established with LCA and benchmarking.

EMS links

ISO 14001 references	
Objectives and targets	4.3.3
Communication	4.4.3
Operational control	4.4.6
Monitoring and measurement	4.5.1
Validation	4.5.4

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
5 mn	1 mns	10 mns	15 mns	30 mns

MODULE 18 : Your micro environmental report

Module	Duration	Objective of the session	Required materia
Environmental report		Get participants familiarized with environmental report writing	PPT presentation Report template Check-list
Presentation	10 min		
Exercise	50 min		

Objective and benefits of the session :

The environmental report is the environmental shop window of the company. It must be accessible and understandable by as many people as possible, and at the same time be as exhaustive as possible regarding the approached themes.

Working process step by step

1. the facilitator explains what is an environmental report :how it has to be built, its usefulness, etc.
2. the facilitator briefly presents the exercise
3. the facilitator hands out a report template to all participants
4. with the help of the results obtained during the previous exercises, participants draw up a short environmental report for their company.
5. the facilitator hands out to each participant a quality evaluation check for the report to each participant

Methodology

PPT presentation

EMS links – Use

ISO14001 references

Management review 4.6

Time management

Introducio n	Facilitator	Group/individual work	Plenary	Time budget
10 min	10 min	30 min	10 min	60 min

Module 19 : Factor 10 and ecomapping

Module	Duration	Objective of the session	Required materia
Apple game	50 min	Visualize that the implementation of a living EMS requires important modifications in the organization chart as well as in the operating mode	An apple or a tennis ball

Objective and benefits of the session :

Environmental management programme most of the time are not very audacious. If we want eco-management to be a tool which pushes companies as far as possible, helps them find again a place on their market, helps them imagine their activities in the future, we must be a lot more innovative.

We have to get aware that a complete change in the way of thinking the process enable us to obtain a lot more efficient results.

We need to visualize that implementing a living EMS requires important modifications in the organization chart as well as in the operating mode

Working process step by step

1. participants first have to remain seated at their place. They have to designate an “environmental management responsible”
2. the facilitator explains that the classical operating mode of the company is visualized by the time needed by the apple to pass one by one in the hands of each participant. This time will be kept.
3. participants will pass the apple, one by one, to each other.
4. afterwards, the “environmental management responsible” will give new instructions to improve the performance (generally, 10 to 20%). The instruction is not to change the structures (everybody has to stay at his place, but for example, people can draw nearer to their neighbours).The exercise is several times renewed.
5. this kind of objectives are realistic and reasonable but not sufficient to accept the challenge of sustainable development. The objective is now to improve performance with factor 10. The only instruction now becomes that the apple run must be divided by ten.

Methodology

Interactivity and group dynamic

EMS links – Use

ISO14001 references

Training, awareness and competence 4.4.2

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
	5 min	45 min		50 min

MODULE 20 : Don't shoot at the pianist !

Module	Duration	Objective of the session	Required materia
Evaluation	30 min	Get a feed-back of each participant on the training.	White paper sheet

Objective and benefits of the session :

Get a feed-back from of each participant on the training, its positive and negative points, how it has met their expectations and the way it can be improved.

Working process step by step

1. the facilitator hands out a white sheet of paper on which each participant writes the way the training has met his/her expectations and all his comments
2. the facilitator concludes the session and asks the participants their comments on the training.
3. the facilitator collects all the paper sheets. These will be used as useful documents to improve the on coming trainings.

Methodology

Interactivity and group dynamic

EMS links - Use

Time management

Introduction	Facilitator	Group/individual work	Plenary	Time budget
		10 min	20 min	30 min